AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims for the above-captioned patent application:

Listing of Claims:

1. (Canceled).

2. (Canceled).

3. (Canceled).

4. (Withdrawn) A device according to Claim 1, wherein said first and second image parts are non-symmetrical.

5. (Canceled).

6. (Canceled).

7. (Canceled).

8. (Canceled).

9. (Canceled).

10. (Canceled).

11. (Canceled).

12. (Canceled).

13. (Canceled).

14. (Canceled).

15. (Canceled).

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32. (Canceled).

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34. (Canceled).

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36. (Canceled).

37. (Canceled).

38. (Canceled).

39. (Canceled).

40. (Canceled).

41. (Withdrawn) A device according to Claim 12, wherein said measuring means includes means for using at least first and second images of said object to determine said measurement data when a view of said object is not contained entirely within said first image.

42. (Withdrawn) A device according to Claim 12, wherein said measuring means includes means for providing a distance to said object to enhance a focus of said image using deconvolution techniques.

43. (Withdrawn) A device according to Claim 12, further comprising means for assembling a plurality of points in a given area and structuring three dimensional information of said points into a finished file which permits reconstructing at least one geometric characteristic of said image.

44. (Canceled).

45. (Canceled).

46. (Canceled).

47. (Withdrawn) A device according to Claim 12, wherein said measuring means includes:

means for projecting a pattern from an off-imaging axis onto said object being viewed such that said pattern tracks across said object relative to a distance of said object from said device; and

means for using a location of said pattern on said object to aid determination of said measurement data.

48. (Canceled).

49. (Withdrawn) A device according to Claim 12, wherein said measuring means includes means for taking a series of measurements from different perspectives, which are used to obtain a more accurate measurement than by taking a measurement from only one perspective.

50. (Canceled).

51. (Canceled).

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79. (Canceled).

80. (Withdrawn) A method according to Claim 58, wherein the step of comparing parameters includes the step of using multiple images of said object to determine said measurement data when a view of said object is not contained entirely within one image.

81. (Withdrawn) A method according to Claim 58, wherein the step of comparing parameters includes the step of providing a distance to said object to enhance a focus of said image using deconvolution techniques.

82. (Withdrawn) A method according to Claim 58, further comprising the steps of:

assembling a plurality of points in a given area; and

structuring three dimensional information of said points into a finished file which permits reconstructing at least one geometric characteristic of said image.

83. (Canceled).

84. (Withdrawn) A method according to Claim 58, wherein the step of comparing parameters includes the steps of:

projecting a pattern from an off-imaging axis onto said object being viewed such that said pattern tracks across said object relative to a distance of said object from said method; and

using a location of said pattern on said object to aid determination of said measurement data.

85. (Canceled).

86. (Withdrawn) A method according to Claim 58, wherein the step of comparing parameters includes taking a series of measurements from different perspectives, and using said measurements to obtain a more accurate measurement than by taking a measurement from only one perspective.

87. (New) A stereoscopic imaging system for viewing an object, said system comprising:

an image splitter disposed along a single optical axis, said image splitter having two flat refractive optical surfaces, each of said optical surfaces being disposed at an angle with respect to said single optical axis to permit first and second images of a distant object to be acquired, said optical surfaces of said image splitter being further arranged to cause said first and second acquired images to converge toward said single optical axis;

at least one electronic imager disposed along said single optical axis: and

at least one focusing lens for focusing said first and second acquired images from said image splitter onto said single electronic imager.

88. (New) A stereoscopic imaging system as recited in Claim 87, wherein views of said first and second images converge at a given object distance such that said views overlap 100% at said object distances.

89. (New) A stereoscopic imaging system as recited in Claim 87, wherein said image splitter is a refractive image splitting prism.

90. (New) A stereoscopic imaging system as recited in Claim 87, wherein said imaging system is disposed in an elongated probe.

91. (New) A stereoscopic imaging system as recited in Claim 90, wherein said image splitter is contained within a detachable distal tip which is usable with said probe.

92. (New) A stereoscopic imaging system as recited in Claim 87, wherein said first and second images are symmetrical.

93. (New) A stereoscopic imaging system as recited in Claim 87, further comprising a window disposed between said image splitter and said object, wherein contact is prevented between external media and said image splitter.

94. (New) A stereoscopic imaging system as recited in Claim 87, further comprising a display for viewing said first and second images as detected by said electronic imager.

95. (New) A stereoscopic imaging system as recited in Claim 94, wherein only one of said first and second images is displayed.

96. (New) A stereoscopic imaging system as recited in Claim 94, further comprising viewing means for viewing said first and second images such that said first image goes to a right eye of a viewer, and said second image goes to a left eye of said viewer wherein said viewer is provided with a three dimensional perspective.

97. (New) A stereoscopic imaging system as recited in Claim 95, wherein at least one of first and second portions of said images are displayed at a different magnification from said first and second images and in which both said at least one of first and second portions and at least one of said first and second adjacent images are displayed simultaneously by said display.

98. (New) A stereoscopic imaging system as recited in Claim 87, further comprising measuring means for comparing parameters of said first and second images so that measurement data of said object are determined, wherein said measurement data includes at least one geometric characteristic of said object.

99. (New) A stereoscopic imaging system as recited in Claim 98, further comprising an optical characteristics data set used by said measuring means to determine said measurement data.

100. (New) A stereoscopic imaging system as recited in Claim 99, wherein a user is signaled if a difference between said optical characteristics data set and global alignment data determined from said image exists.

101. (New) A stereoscopic imaging system as recited in Claim 98, wherein said system is adapted for receiving one of a plurality of detachable distal tips, wherein each of said detachable tips has a corresponding optical characteristics data set, and wherein data determined from said image is used to select which optical characteristics data set corresponds to said detachable tip emplaced on said probe.

102. (New) A stereoscopic imaging system as recited in Claim 98, wherein said system is used in an inspection device that uses one of a plurality of probes, wherein each of said probes has a corresponding optical characteristics data set, and wherein data determined from said image is used to select which optical characteristics data set corresponds to said probe includes in said device.

103. (New) A stereoscopic imaging system as recited in Claim 99, wherein said system issued in an inspection device, said device further comprising calibration means for generating said optical characteristics data set of said device, wherein said calibration means includes a plurality of object target points which appear in both of said first and second stereo images when viewed with said probe.

104. (New) A stereoscopic imaging system, according to Claim 103, wherein said calibration means includes means for color balancing.

105. (New) A stereoscopic imaging system as recited in Claim 103, wherein said plurality of object target points comprises at least two object target points with known spacing between them at a first object target distance and at least two object target points with known spacing between them at a second object target distance, wherein a distance between said first and second object target distances is known.

106. (New) A stereoscopic imaging system as recited in Claim 103, wherein said plurality of object target points comprises at least two object target points with known spacing between them at a first object target distance and at least one object target point at a second object target distance, wherein a distance between said first and second object target distances is known, and wherein one of said first and second object target distances is known.

107. (New) A stereoscopic imaging system as recited in Claim 103, wherein said optical characteristics data set includes optical mapping distortion, magnification at one or more object target distances, and parallax information, wherein said calibration means generates said optical characteristics data set from only one image.

108. (New) A stereoscopic imaging system as recited in Claim 103, further comprising means for automatic detection and identification of said plurality of object target points.

109. (New) A stereoscopic imaging system as recited in Claim 103, wherein calibration means includes using a reflection of illumination at at least one known object target distance.

110. (New) A stereoscopic imaging system as recited in Claim 99, wherein said optical characteristics data set is stored in non-volatile memory in said probe.

111. (New) A stereoscopic imaging system as recited in Claim 99, wherein said optical characteristics data set and said first and second image parts are stored in a single file.

112. (New) A stereoscopic imaging system as recited in Claim 99, adjusting means for adjusting said optical characteristics data set of said device to increase the accuracy of said measurement data when a distal portion of said probe is operated in a medium with an index of refraction which differs from that of air.

113. (New) A stereoscopic imaging system as recited in Claim 98, wherein said measuring means includes matching means for matching a same point viewed on said object in each of said first and second images.

114. (New) A stereoscopic imaging system as recited in Claim 113, wherein said matching means includes automatic matching means for automatic matching of a user designated point viewed on said object in said first image to a corresponding point in said second image.

115. (New) A stereoscopic imaging system as recited in Claim 114, wherein said automatic matching means includes means for requesting user selection of a correct matched point from a plurality of automatically-identified possible matches.

116. (New) A stereoscopic imaging system as recited in Claim 114, wherein, when a position of said user-designated point on said viewed object in said first image is changed by said user, said automatic matching dynamically occurs without further user intervention.

117. (New) A stereoscopic imaging system as recited in Claim 114, wherein said automatic matching means includes global alignment means for performing an automatic global alignment of said first and second images.

118. (New) A stereoscopic imaging system recited in Claim 117, wherein said global alignment means includes means for determining a global vertical shift between said first and second images.

119. (New) A stereoscopic imaging system as recited in Claim 117, wherein said global alignment means includes means for automatically determining one or more regional horizontal shifts between said first and second images.

120. (New) A stereoscopic imaging system as recited in Claim 117, wherein said global alignment means uses the positions of one or more user-designated matched points in said first and second images to aid in performing said global alignment.

121. (New) A stereoscopic imaging system as recited in Claim 117, wherein a correction by a user of an incorrect automatic match automatically invokes said global alignment means.

122. (New) A stereoscopic imaging system as recited in Claim 117, wherein data derived from said global alignment means is used to make said automatic matching of said matching means faster than otherwise.

123. (New) A stereoscopic imaging system as recited in Claim 117, wherein data derived from said global alignment means is used to reduce a probability of incorrect matches of subsequent user-defined points.

124. (New) A stereoscopic imaging system as recited in Claim 117, further comprising means, based on data derived from said global alignment means, for determining and conveying to a user an overlap region of said first and second images in which measurements are performed.

125. (New) A stereoscopic imaging system as recited in Claim 98, wherein said measuring means includes means for indicating a measurement accuracy of said measurements.

126. (New) A stereoscopic imaging system as recited in Claim 125, wherein said measuring means includes means for an operator to designate a maximum estimated error limit above which said device indicates a warning.

127. (New) A stereoscopic imaging system as recited in Claim 98, wherein said measuring means includes using at least one onscreen cursor and means for displaying a symbol, which indicates both a type of measurement being performed and a role of said cursor in said type of measurement.

128. (New) A stereoscopic imaging system as recited in Claim 98, wherein said measuring means includes using at least one onscreen cursor and wherein at least one measurement point designated by a user when performing one type of measurement is kept even when a different type of measurement is selected.

129. (New) A stereoscopic imaging system as recited in Claim 98, wherein said determined measurements are stored as non-viewable data along with said images in a single file.

130. (New) A method for viewing an object in a stereoscopic imaging system, said method comprising the steps of:

splitting a view of said object into first and second adjacent images using an images splitter, said image splitter having a pair of flat refractive optical surfaces disposed at an angle relative to a single optical axis for converging said images towards said single optical axis;

focusing said first and second adjacent images from said image splitter onto at least one electronic imager disposed along said single optical axis; and

detecting said first and second images using said at least one electronic imager.

131. (New) A method as recited in Claim 130, further comprising the step of disposing a window between said image splitter and said object wherein contact is prevented between external media and said image splitter.

132. (New) A method as recited in Claim 130, further comprising the step of viewing said first and second images as detected by the step of detecting.

133. (New) A method as recited in Claim 132, further comprising the step of displaying only one of said first and second images.

134. (New) A method as recited in Claim 132, further comprising the step of viewing said first and second images such that a right-hand image goes to a right eye of a viewer, and a left-hand image goes to a left eye of said viewer wherein said viewer is provided with a three dimensional perspective.

135. (New) A method as recited in Claim 130, further comprising the step of comparing parameters of said first and second images to determine measurement data of said object.

136. (New) A method as recited in Claim 130, further comprising the step of determining at least one geometric characteristic of said object.

137. (New) A method as recited in Claim 135, further comprising the step of generating an optical characteristics data set of said probe by comparing a known set of object target points.

138. (New) A method as recited in Claim 137, further comprising the step of using said optical characteristics data set to determine said measurement data.

139. (New) A method as recited in Claim 137, further comprising the step of storing said optical characteristics data set in non-volatile memory in said probe.

140. (New) A method as recited in Claim 137, further comprising the step of adjusting said optical characteristics data set so that said probe is operable in a medium with an index of refraction other than air.

141. (New) A method as recited in Claim 137, wherein said step of generating an optical characteristics data set includes color balancing.

142. (New) A method as recited in Claim 137, wherein said set of known object target points comprises at least two object target points at a first object target distance and at least one object target point at a second object target distance.

143. (New) A method as recited in Claim 137, further comprising generating said optical characteristics data set from said first and second images, wherein said optical characteristics data set includes optical mapping distortion and magnification at one or more object target distances.

144. (New) A method as recited in Claim 137, further comprising the step of automatically detecting and identifying said known set of object target points.

145. (New) A method as recited in Claim 137, wherein said step of generating said optical characteristics data set includes using a reflection of illumination at at least one known object target distance.

146. (New) A method as recited in Claim 135, matching a same point in each of said first and second images.

147. (New) A method as recited in Claim 146, further comprising the step of automatically matching a user designated point from said first image to said second image.

148. (New) A method as recited in Claim 147, wherein said step of automatically matching includes performing a global alignment of said first and second images.

149. (New) A method as recited in Claim 148, wherein said step of performing said global alignment includes determining a global vertical shift between said first and second images.

150. (New) A method as recited in Claim 148, wherein said step of performing said global alignment includes determining one or more regional horizontal shifts between said first and second images.

151. (New) A method as recited in Claim 148, wherein data derived from the step of automatically matching at least one matched point in said images is used to make the step of automatically identifying at least one user defined point from said first image to said second image complete faster than otherwise.

152. (New) A method as recited in Claim 146, wherein said step of matching includes the step of automatically identifying at least one matched point in said first and second image parts.

153. (New) A method as recited in Claim 152, wherein data derived from the step of automatically identifying at least one matched point in said first and second images is used to reduce a probability of incorrect matches of subsequent user-defined points.

154. (New) A method as recited in Claim 152, further comprising the step of determining and conveying to a user an overlap region of said first and second images in which measurements are performed.

155. (New) A method as recited in Claim 135, wherein the step of comparing parameters includes the step of indicating a measurement accuracy of said measurements.

156. (New) A method as recited in Claim 155, wherein the step of comparing parameters includes enabling an operator to designate a maximum estimated error limit above which limit said device indicates a warning to said operator.

157. (New) A method as recited in Claim 135, wherein the step of comparing parameters includes using at least one onscreen cursor.

158. (New) A method as recited in Claim 135, further comprising the step of storing said determined measurements as non-viewable data along with said images in a single file.